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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,752	01/27/2004	Zenya Nagashima	075834.00450	1915
33448 7590 12/27/2006 ROBERT J. DEPKE LEWIS T. STEADMAN ROCKEY, DEPKE, LYONS AND KITZINGER, LLC SUITE 5450 SEARS TOWER CHICAGO, IL 60606-6306			EXAMINER PENG, CHARLIE YU	
			ART UNIT 2883	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		12/27/2006	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/765,752

Applicant(s)

NAGASHIMA, ZENYA

Examiner

Charlie Peng

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 12-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

  
**BRIAN HEALY**  
**PRIMARY PATENT EXAMINER**

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Remarks*

Applicant amended claims 12 and 16 to incorporate allowable subject matters previously indicated. However, the indicated allowabilities have been withdrawn upon further consideration in view of prior art (U.S. 4,540,237 to Winzer) previously cited. The examiner regrets any inconvenience this may cause. Please refer to 35 USC 103 rejections below for details.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,205,274 to Zhou in view of U.S. Patent 5,552,918 to Krug et al. and U.S. Patent 4,540,237 to Winzer. Zhou teaches an optical device having an optical fiber **101** having an inclined end face at one end, wherein the end face is has a reflective coating **105**,

a light source **102** located radially from the center of the optical fiber **101** to emit light and faces the reflective coating **105**,

a light detector **118** places along an optical axis of the optical fiber **101** and adjacent to the one end of the optical fiber **101**. (See at least Fig. 7A and description) Zhou is silent on how light diffuses from the light source **102**. Krug teaches an optical

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transceiver module having a light transmitter 2, a light receiver 6, and a fiber 4 all housing in a common housing for the purpose of substantially reducing troublesome back-reflections and undesired crosstalk. (Column 1, line 59 – column 2, line 23.) Since the housing and the transceiver's structure serve to prevent crosstalk between the light transmitter and the light receiver, the light receiver must be outside any light diffusion or transmission range of the light transmitter.

Zhou and Krug are silent on the end face of the optical fiber having a non-angled portion. Winzer teaches a coupling component comprising

a first fiber  $f_s$  having an angled surface  $A_a$  coated with a reflective layer  $R$  and a non-angled surface  $A_e$ ,

a second fiber  $f_e$  sharing and communicate through the non-angled surface  $A_e$  with the first fiber,

a third fiber  $f_a$  serving as an out-coupling fiber for coupling light out of the first optical fiber  $f_s$ .

Since both the Zhou reference and the Krug reference are of analogous art placing optical elements outside to light transmission path of the optical fibers and communicating with the optical fibers via a angled and reflective end surface, the purpose of using the teachings of the Krug and Winzer references would be recognized as relevant prior art to Zhou's invention. It would have been obvious to one of ordinary skill in the art at the time the invention was made to built a housing, preferably opaque, as suggested by Krug's teachings around the optical fiber in Zhou's invention and use the multi-end-faced fiber by Winzer. The motivation would be to reduces or eliminate

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interference by light signal coming directly from the source, as the detector would only receive light signal from the optical fiber as intended. Further, one of ordinary skill in the art would recognize the advantage of having a non-angled portion of the end surface as it permits the fiber to abut and align a flat surface readily and easily.

With reference to claims 13 and 17, core diameter of the fiber  $f_s$  is  $d_s$ , and core area is indicated as that inside the dashed line.

With reference to claims 14 and 18, Zhou teaches that the detector **118** can also be placed so that a normal line to its light receiving plane is perpendicular to an optical axis of the optical fiber **101** and the light source **102** is facing the inclined end face.

With reference to claims 15 and 19, only the angled surface  $A_a$  is coated with the reflective film **R**.

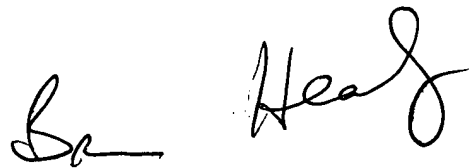
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charlie Peng whose telephone number is (571) 272-2177. The examiner can normally be reached on 9 am - 6 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cyp

A handwritten signature in black ink, appearing to read "B. Healy", is written over the printed name.

BRIAN HEALY  
PRIMARY PATENT EXAMINER